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UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE BOARD OF PATENT APPEALS
AND INTERFERENCES

Ex parte PETER ALEXANDER GROSSMAN

Appeal 2007-0923
Application 09/834,255
Technology Center 2600

Decided: May 7, 2008

Before KENNETH W. HAIRSTON, JOHN C. MARTIN, and JAY P. LUCAS, *Administrative Patent Judges.*

MARTIN, *Administrative Patent Judge.*

DECISION ON APPEAL

STATEMENT OF THE CASE

This is an appeal from the Examiner's rejection of claims 1-3, 5-8, 10, 16, and 17, which are all of the pending claims, under 35 U.S.C. § 103(a).

We have jurisdiction under 35 U.S.C. § 6(b). We AFFIRM-IN-PART.

A. Appellant's invention

Appellant's invention involves the use of a touch-sensitive screen and stylus to perform a zoom action (enlargement or reduction) on a displayed image (Specification 2:7-10). The amount of zoom is defined by the amount of time that the stylus is retained on the screen (*id.* at 2:24-25), during which time the screen image is refreshed a number of times per second, each time being magnified or reduced by a uniform amount (*id.* at 2:27-28). Preferably, the position of the stylus on the screen is continually monitored, and, on movement of the stylus across the screen, the center of the zoom action is altered so that the center of the zoom action follows the points on the screen traced by the stylus (*id.* at 2:31 to 3:2).

B. The claims (Claims App. to Br.)

The independent claims are claims 1, 6, 16, and 17, of which claim 1 reads:

> 1. A system for manipulating an image on a screen, said system comprising:
>
> a touch-sensitive screen for displaying said image;
>
> a stylus for indicating an image point of said image displayed on said screen by touching said screen; and
>
> means for generating said image on said screen, said means for generating including a dynamic zoom means for carrying out a zoom action on said image on said screen;
>
> wherein said zoom means detects the image point indicated by said stylus on said screen while the stylus is moved across said screen, and repeatedly performs a zoom action on said image on said screen using said detected image point as the center of said zoom action until said stylus is removed from said screen to thereby one of continuously

enlarge and reduce the image as the stylus is moved across the screen with the center of the zoom action following the movement of the stylus.

We understand the phrase "repeatedly performs a zoom action on said image . . . until said stylus is removed" to require repeated performance of the zoom action during a single (albeit moving) contact of the stylus with the screen. Claim 6 includes a similar requirement ("repeating said step of performing said zoom action until it is detected that said stylus has been removed from contact with said screen"), as does claim 17 ("moving the stylus across said screen while maintaining contact between the stylus and the screen"). On the other hand, although claim 16 likewise requires repeated performance of the zoom action, it does not specify that the repeated performance occurs during a single contact of the stylus with the screen:

16. A system for manipulating an image on a screen, said system comprising:

a touch-sensitive screen for displaying said image;

a stylus for indicating an image a point on said screen by touching said screen; and

means for generating said image on said screen, said means for generating including a zoom means for carrying out a zoom action on said image on said screen;

wherein said zoom means detects the image point indicated by said stylus on said screen, and repeatedly performs a zoom action on said image on said screen using said detected image point as the center of said zoom action;

said zoom means continually monitors the position of said stylus on said screen; and wherein, on movement of said stylus across said screen, said zoom means alters the center of said zoom action so

> that the center of said zoom action follows the movement of said stylus to thereby one of continuously enlarge and reduce the image as the stylus is moved across the screen with the center of the zoom action following the movement of the stylus.

Consequently, Appellant is incorrect to argue that all of claims 1, 6, 16, and 17 "include that the zoom action is repeatedly performed until the stylus is detected to have been removed from contact with the screen" (Br. 9). However, Appellant correctly characterizes those claims as calling for tracking the contact point of the stylus as it is moved across the screen and having the center of the zoom action follow the movement of the stylus (*id.*).

C. The references and rejection

The references relied on by the Examiner are:

Montagna et al. (Montagna)	US 4,899,292	Feb. 6, 1990
Hailey et al. (Hailey)	US 5,602,870	Feb. 11, 1997

Claims 1-3, 5-8, 10, 16, and 17 stand rejected under 35 U.S.C. § 103(a) for obviousness over Hailey in view of Montagna.

THE ISSUE

The issue is whether Appellant has shown reversible error by the Examiner in maintaining the rejection. *See In re Kahn*, 441 F.3d 977, 985-86 (Fed. Cir. 2006) ("On appeal to the Board, an applicant can overcome a rejection by showing insufficient evidence of *prima facie* obviousness or by rebutting the *prima facie*

case with evidence of secondary indicia of nonobviousness.") (quoting *In re Rouffet*, 149 F.3d 1350, 1355 (Fed. Cir. 1998)).

ANALYSIS

Although the Examiner treats Hailey as the primary reference, we begin our analysis with Montagna. Montagna discloses apparatus and processes for storing and displaying documents and associated graphic images in insurance estimation, service manual and other systems (col. 1, ll. 55-68). As shown Figure 4 (not reproduced below), the system includes a membrane keypad 74 (col. 6, l. 57), a touchscreen 70, and a stylus 130.

Montagna's Figure 9 is reproduced below.

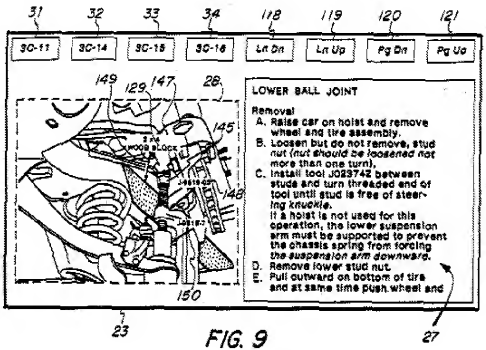

FIG. 9

Figure 9 shows a screen of the system of Figure 1 displaying a portion of document text and associated graphics for a service manual application (col. 4, ll. 13-15). Reference numbers 31-34, displayed above graphic image 31 in boxes or touch pads on the screen, were extracted from the document text (col. 10, ll. 48-51). Touching one of these boxes with the wand causes the corresponding graphic image to be displayed (col. 11, ll. 1-7), as depicted in Figure 9. The displayed image "includes other touch pads 142 [sic, 147] and 148 which are associated with parts by arrows or lines 149 and 150, respectively" (col. 11, ll. 19-21). Touching either of these pads causes display of a graphic image or table corresponding to the associated part (col. 11, ll. 21-26).

Zooming-in is effected as follows. When the user touches screen 70 over a portion of graphic image 31 exclusive of the touch pads 147 and 148, a portion of the image is zoomed in or enlarged by a factor of 2:1 and centered at the touch point in the display window (col. 11, ll. 28-32). For purposes of illustration, Montagna assumes that a point 145 is touched in the image of Fig. 9 (col. 11, ll. 32-33). The processor 60 (Fig. 4) calculates how to position the resulting 2:1 enlarged image in the display window while retaining use of the full area of the window (col. 11, l. 34 to col. 12, 6). If possible, the touch point becomes the exact center point of the zoomed-in image (col. 11, ll. 45-50). Otherwise, the processor positions the touch point as close as possible to the center of the display window without allowing any image edge to appear inside the borders of the display window.

Montagna's Figure 10 is reproduced below.

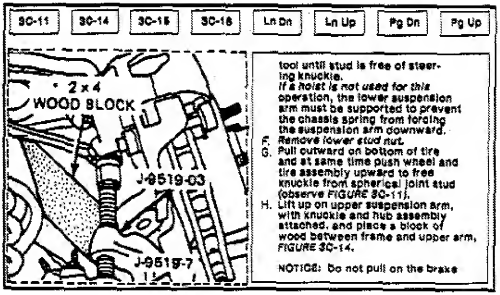

FIG. 10

Figure 10 shows the 2:1 zoomed-in image display that results from touching point 145 in the image displayed in Figure 9 (col. 12, ll. 33-34).

Using the wand to touch a point in the enlarged 2:1 image shown in Figure 10 (which can be the same as the initial touch point or a different point) effects a further 2:1 zoom action centered on that touch point, yielding a 4:1 zoomed-in image (col. 12, ll. 42-50).

Montagna's Figure 5 is reproduced below.

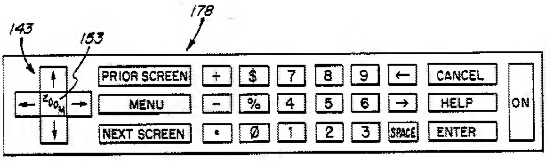

FIG. 5

Figure 5 shows that the keypad 74 includes scrolling pads 143 (col. 14, ll. 21-22), a zoom key 153 (col. 12, l. 68), and various other control keys. Following either of the above zooming-in steps, the displayed image can be zoomed out by a factor of 1:2 by touching zoom key 153 on keypad 74 (col. 12, ll. 66-68).

We do not agree with Appellant that "Montagna et al. . . . fails to disclose that the center of zoom action follows the movement of the stylus as the stylus is moved across the screen" (*id.*), as required by all of the independent claims. In the example discussed above, touching the wand to the point 145 in the Figure 9 image results in a 2:1 zoomed image (Fig. 10) that is centered on that touch point. Using the wand to touch the 2:1 zoomed image of Figure 10 at a second touch point near but not at its center (which corresponds to touch point 145) will result in a 4:1 zoomed image centered on that second touch point. Under these circumstances, the center of the zooming-in action follows the movement of the wand between the first touch point and the second touch point, as required by claim 16. Also, these two zooming-in operations satisfy the requirement of claim 16 for "repeatedly

perform[ing] a zoom action on said image on said screen using said detected image point as the center of said zoom action."

Because Appellant has not shown that Montagna fails to satisfy all of the limitations of claim 16, we are affirming the rejection with respect to that claim, with Hailey being cumulative as to that claim.[1]

However, because each touch of Montagna's wand from the display screen results in the performance of only a *single* 2:1 zooming-in operation, we agree with Appellant that Montagna does not satisfy the requirement of claims 1, 6, and 17 for repeated performance of the zoom action during a single (albeit moving) contact of the stylus with the screen. *See* Reply Br. 5 ("Montagna et al. . . . does not disclose that the zoom action is repeated while the stylus contacts the screen."). For this limitation, the Examiner relies on Hailey (Answer 7), which discloses digital signal processing circuitry for the implementation of "continuous zoom" to a digital image (col. 1, ll. 8-10). Also, the "Background of the Invention" explains that "[i]n the case of dynamic zoom, since the zoom ratio varies from frame-to-frame, it is also required that the cut-off frequency of the interpolation filter be easily adjustable" (col. 1, ll. 25-28).

Hailey's invention is "a spatial interpolation unit characterised in that the spatial interpolation is implemented by means of a discrete set of filters" (col. 2, ll. 9-12). Figure 5, which depicts Hailey's invention (col. 3, ll. 1-3), is reproduced below.

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[1] It is therefore not necessary with respect to this claim to address Appellant's argument that the Examiner failed to establish motivation for combining the teachings of Hailey and Montagna (Reply Br. 6-7).

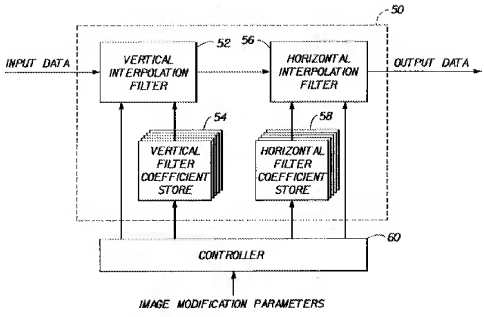

FIG. 5

Figure 5 shows a vertical interpolation filter 52 and a horizontal interpolation filter 56 arranged in series so that input pixel data is first processed by the vertical filter 52 and then by the horizontal filter 56 to provide the desired output data (col. 5, ll. 1-4). "Each filter 52, 56 and its associated filter coefficient store 54, 58 is controlled by the controller 56 [sic, 60]" (col. 5, ll. 4-6). During a dynamic zoom operation, wherein the zoom ratio is varied from one frame to another (col. 1, ll. 25-26), the selected filter horizontal and vertical coefficients change in accordance with the desired zoom ratio for the current frame (col. 1, ll. 63-64).

Hailey does not explain how a continuous or dynamic zoom operation is initiated or controlled. The Examiner's position is that it would have been obvious

to use a touch-sensitive screen and stylus for that purpose in view of Montagna's teaching of using a touch-sensitive screen and stylus to control zooming (Answer 4). However, Montagna fails to disclose repeatedly performing a zoom action during a single contact of the stylus with screen, as required by independent claims 1, 6, and 17. Instead, each touch of the stylus to the screen in Montagna results in a single zoom action. As a result, even assuming for the sake of argument that it would have been obvious from Montagna to use a touch screen and stylus for the purpose of identifying the center point of Hailey's continuous or dynamic zoom operation, the Examiner has not adequately explained, and it is not otherwise apparent, why it further would have been obvious to maintain the stylus in contact with the screen during the continuous or dynamic zoom operation, monitor the position of the stylus during that contact, and cause the center of the zoomed image to track movement of the stylus, as required to satisfy those claims.

Consequently, we are reversing the rejection with respect to independent claims 1, 6, and 17 and their dependent claims 2, 3, 5, 7, 8, and 10.

DECISION

The rejection of claims 1-3, 5-8, 10, 16, and 17 for obviousness over Hailey in view of Montagna is reversed with respect to claims 1-3, 5-8, 10, and 17 and is affirmed with respect to claim 16. The decision of the Examiner is therefore affirmed-in-part.

1No time period for taking any subsequent action in connection with this appeal may be extended under 37 C.F.R. § 1.136(a). *See* 37 C.F.R. §§ 41.50(f) and 41.52(b).

AFFIRMED-IN-PART

SD

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